



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/541,207

07/01/2005

Dirk Weber

10191/4226

7657

26646 7590 02/26/2008

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER

PIPALA, EDWARD J

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

02/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,207	Applicant(s) WEBER ET AL.	
	Examiner EDWARD PIPALA	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 11-13, 17-30 and 32-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-13, 17-30 and 32-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/23/07 has been entered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings were received on 3/27/07. These drawings are approved.

Claim Objections

4. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 20 (first instance), has been renumbered as claim 19.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-13 and 17-30 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kellum (U.S. Pub. 2004/0153244) in view of Rao et al. (U.S. Pub. 2004/0019420).

Kellum teaches reducing false alarms in an impact detection system of a vehicle and issuing a warning to a driver, where section [0002], under the heading of background of the invention teaches that a collision warning system (CWS) is intended to mitigate or eliminate vehicle impacts by generating a timely warning to the driver to take evasive action when a sensor capable of detecting objects in the frontal area of the vehicle has determined that an object is present through information related to range, range rate, and azimuth, as well as additional information relating to relative acceleration, the size of the object, the dimensions of the object and the direction of movement. This portion of Kellum concludes with an indication that laser and radar technologies are well known for gathering the above types of information, where sections [0014-0015] further teach an object position tracking block (102), a target identification block (104), a threat assessment block (106), and a driver warning block (108), where the object is detected through either laser or radar detection, where

Art Unit: 3663

section [0015]] particularly teaches that the target identification block (104) receives input information from the object detection block (102) in order to identify the nature of the objects detected (e.g., size, shape, location, speed, acceleration, etc) and thus determine whether the objects (targets) are potentially in the path of the vehicle, However Kellum does not particularly disclose determining the objects to be of either the vehicle class or a pedestrian class, or an object class wherein the object is securely anchored.

Rao et al. ('420) discloses pre-crash sensing system for a vehicle in which on object sensor (17) determines an object relative velocity signal as part of an object classification signal, where a controller is further used to determine countermeasures with respect to object distance, relative velocity and object classification signal. Furthermore, section [0012] of Rao et al. teaches that as a further aspect of operating the pre-crash sensing system includes determining the object distance, relative velocity, and classification with an object sensor capable of "determining an object length and object width corresponding to the object classification".

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the length and width based classification system of Rao et al. ('420), within the context of the object detection and driver warning system of Kellum, so as to determine or distinguish between pedestrian and vehicle type objects or targets in the path of the vehicle as part of a collision mitigation or elimination system, by warning the driver according to the relative size and acceleration of an object as part of an impact threat assessment.

With respect to claims 11-13 and 33, in which a device and method for classifying at least one object with respect to its detected velocity and acceleration and their respective reference values as a characteristic of time, please see section 0002 of Kellum, which discloses a collision warning system (CWS) intended to mitigate and/or eliminate vehicle impacts by generating a timely warning to the driver to take an evasive action. Such a vehicle is configured with a sensor (or sensors) that is/are capable of detecting objects in the frontal area of the vehicle. The sensor not only detects the presence of an object, but also provides some quantitative information about the object such as range, range rate, and azimuth position of the object. Additional information related to the object (e.g., a lead vehicle in many instances) may include relative acceleration, the size of the object, the dimensions of the object, the direction of movement of the object, etc. The following section (0003) further discloses the use of a path prediction algorithm and a threat assessment algorithm, which evaluate the incoming data, analyze the particular situation, and then determine if there is any imminent threat of impacting an object in the frontal area of the vehicle, where many of these algorithms are based on parameters such as "time to impact", "time headway", or perhaps basic vehicle kinematics.

With respect to claims 17- 20 which recite "that the velocity is determined with the aid of a reference velocity", and claims 21-24 which similarly recite "wherein the velocity is determined on the basis of a time characteristic of location information", please see the afore mentioned section of section 0002 in which it clearly teaches that typically a vehicle is configured with a sensor (or sensors) that is capable of detecting

Art Unit: 3663

objects in the frontal area of the vehicle, and that the sensor not only detects the presence of an object but also provides some quantitative information about the object such as range, range rate, and azimuth position of the object. Additionally, information related to the object (e.g., a lead vehicle in many instances) may include relative acceleration, the size of the object, the dimensions of the object, the direction of movement of the object, etc.

With respect to claims 25-30 which recite the use of at least one photonic mixer in a Lidar type environmental sensor system, for haptically outputting information to the driver as a function of object classification, please see sections 0014 and 0015 which clearly disclose object detection in conjunction with threat assessment by determining the location, speed, acceleration, etc. of an object as part of a driver warning system which warns a driver haptically or by a buzzer, warning light or other type of feedback, that there is a likelihood of an impact.

With respect to claims 32-33, and 34 which recite a method classifying at least one object based on an object velocity and an object acceleration, wherein the classification includes at least one of a vehicle object class and a pedestrian object class, and an anchored object class, by determining the object velocity and acceleration from at least one signal of an environmental sensor system and subsequently controlling a restraint system as a function of the object classification, and the relative velocity of the object relative to the vehicle, please note that Kellum teaches target identification by considering the size (section 0002) location, speed and acceleration of

an object (section 0015), whereas Rao et al. ('420) further teaches considering the length and width of the host and target vehicles [0012], where the classification for small objects may include pedestrians and large objects as vehicles, where a stationary object would potentially pose the greatest threat if found in the path of a vehicle and would have been obvious to one of ordinary skill in the art based on relative object position, velocity and acceleration.

Response to Arguments

6. Applicant's arguments filed 11/23/07 have been fully considered but they are not persuasive.

Applicant argues that a prima facie case has not been made, even though both Kellum and Rao et al. each teaches detecting objects in front the path of a moving vehicle, where Rao et al. particularly teaches object classification with respect to an object's determined length and width (section 0012), where the following section further teaches that the reason to take the length and width of an object into consideration is so that effective countermeasures and modes may be taken depending on the type of object(s) detected.

Applicant further argues that each of independent claims 11 and 33 recites classification of objects into either a pedestrian object class or a vehicle object class, whereas the Examiner is applying the teachings of Rao et al. with respect to detecting length and width, and the teachings of Kellum with respect to determination of object relative velocity and acceleration, it would have been obvious to one of ordinary skill in

Art Unit: 3663

the art to distinguish between slow and small objects (pedestrians) and relatively fast and large objects (vehicles), depending on the "relative" frame of reference for speed (or vice versa), since these limitations are not claimed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWARD PIPALA whose telephone number is (571)272-1360. The examiner can normally be reached on M-S 9:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ejp

Serial Number: 10/541,207

Page 9

Art Unit: 3663

/Jack W. Keith/
Supervisory Patent Examiner, Art Unit 3663